

WE CLAIM:

1. A filter, comprising:
 - (a) a housing comprising a base, a top, and at least one sidewall extending from the base to the top, the housing defining a first chamber and a second chamber separate from the first chamber, the housing further defining at least one aperture through the at least one sidewall into the first chamber, the housing also defining an inlet port and an outlet port in fluid communication with the second chamber, the outlet port located in the at least one sidewall or in the top of the housing, the inlet port located in the base of the housing;
 - (b) adsorbent media disposed within the first chamber of the housing; and
 - (c) filter media disposed within the second chamber of the housing.
2. The filter according to claim 1, wherein the housing is configured for insertion into an electronic device enclosure with the first chamber in a region of higher air pressure than the second chamber during operation of the electronic device.
3. The filter according to claim 1, wherein the housing defines a path for fluid flow through the at least one aperture, into the first chamber, in contact with the adsorbent media for removal of contaminants, and out through the at least one aperture.

4. The filter according to claim 1, wherein the housing defines a path for flow of fluid through the inlet port, into contact with the filter media in the second chamber, and out the outlet port.
5. The filter of claim 1, wherein the housing further defines a diffusion channel coupling the inlet port and the second chamber.
6. The filter of claim 1, wherein the housing comprises a non-porous material.
7. The filter of claim 1, further comprising a porous membrane disposed over the outlet port.
8. The filter of claim 7, wherein the porous membrane comprises a polytetrafluoroethylene membrane.
9. The filter of claim 1, further comprising a mounting adhesive disposed on the base of the housing.
10. The filter of claim 1, wherein the filter media comprises carbon filter material.
11. The filter of claim 1, wherein the adsorbent media comprises an adsorbent material selected from the group consisting of activated carbon, impregnated carbon, activated alumina, molecular sieves, silica gel, silica, and combinations thereof.

12. The filter of claim 1, wherein the housing further comprises an interior wall separating the first chamber from the second chamber.

13. The filter of claim 1, further comprising a porous support layer disposed within the interior volume.

14. A data storage device assembly comprising:

(a) an enclosure;

(b) at least one disk rotatably mounted within the enclosure; and

(c) a filter construction positioned within the enclosure, the filter

construction comprising:

(i) a housing comprising a base, a top, and at least one sidewall extending from the base to the top, the housing defining a first chamber and a second chamber separate from the first chamber, the housing further defining at least one aperture through the at least one sidewall into the first chamber, the housing also defining an inlet port and an outlet port for the second chamber, the outlet port located in the at least one sidewall or in the top of the housing, the inlet port located in the base of the housing;

(ii) adsorbent media disposed within the first chamber of the housing; and

(iii) filter media disposed within the second chamber of the housing.

15. The disk drive assembly according to claim 14, wherein the first chamber is positioned facing the at least one disk.
16. The disk drive assembly according to claim 14, wherein the filter construction is oriented such that the second chamber is located on the side of the filter facing opposite the disk.
17. A method for protecting an electronic device from contaminants, the method comprising:
 - (a) positioning a filter construction inside an electronic device housing, the filter construction comprising:
 - (i) a housing comprising a base, a top, and at least one sidewall extending from the base to the top, the housing defining a first chamber and a second chamber separate from the first chamber, the housing further defining at least one aperture through the at least one sidewall into the first chamber, the housing also defining an inlet port and an outlet port for the second chamber, the outlet port located in the at least one sidewall or in the top of the housing, the inlet port located in the base of the housing;
 - (ii) adsorbent media disposed within the first chamber of the housing; and
 - (iii) filter media disposed within the second chamber of the housing.
 - (b) removing contaminants using the filter media and adsorbent media.

18. The method of claim 17, wherein the filter construction is oriented such that the first chamber is exposed to a higher air pressure region within the electronic device housing than the second chamber during operation of the electronic device.

19. The method of claim 17, wherein high pressure is generated by rotation of at least one disk.

20. The method of claim 17, wherein fluid enters the first chamber and contacts the adsorbent media.

21. The method of claim 17, wherein fluid enters the second chamber through the inlet port and contacts the filter media.